



Serial No. 09/295,709

RECEIVED
TECHNOLOGY CENTER 2000
AUG 22 2001

VERSION WITH MARKINGS TO SHOW CHANGES MADE

15. (Twice amended) A flip-chip including at least one conductive bump comprised of a viscous conductive material, the at least one conductive bump exhibiting a height-to-width ratio of at least approximately 3 to 1 and including a first surface adjacent said flip-chip and a second surface opposite said first surface exhibiting a generally planar portion over a substantial portion thereof, said flip chip including said at least one conductive bump formed by:
providing said flip-chip with at least one bond pad;
dispensing a viscous conductive material on said flip-chip to define at least one conductive bump of a selected configuration exhibiting a height-to-width ratio of at least approximately 3 to 1, said at least one conductive bump in electrical communication with said at least one bond pad of said flip-chip and including a first surface adjacent said flip-chip and a second surface opposite said first surface; and
inverting said flip-chip without substantial lateral confinement of said viscous conductive material and maintaining said flip-chip in an inverted position at least until said conductive material substantially stabilizes so as to exhibit a desired stable shape and lateral boundary substantially defining sizes of said first and second surfaces of said at least one conductive bump and wherein a substantial portion of said second surface of said at least one conductive bump exhibits a generally planar configuration.

47. (Amended) The semiconductor substrate of claim [43] 46, wherein said [viscously dispensed] viscous adhesive material comprises at least one of the group consisting of a polyimide, a phenolic resin, a thermoplastic, and a thermosetting plastic.

48. (Amended) The semiconductor substrate of claim [43] 46, wherein said at least one adhesive patch comprises at least one lateral edge exhibiting an angle of repose of at least approximately 20 degrees.

49. (Amended) The semiconductor substrate of claim [43] 46, wherein said at least one adhesive patch comprises at least one trailing edge exhibiting an angle of repose of at least approximately 13 degrees.

50.(Amended) The semiconductor substrate of claim [43] 46, wherein said at least one adhesive patch comprises at least one leading edge exhibiting an angle of repose of at least approximately 20 degrees.

51.(Amended) The semiconductor substrate of claim [43] 46, wherein said at least one adhesive patch exhibits a height-to-width ratio of at least approximately 3 to 1.

58. (Amended) The flip-chip of claim [54] 57, wherein said viscous conductive material of said at least one conductive bump comprises at least one of the group consisting of a polyimide, a phenolic resin, a thermoplastic, and a thermosetting plastic.

59. (Amended) The flip-chip of claim [54] 57, wherein said at least one conductive bump comprises at least one lateral edge exhibiting an angle of repose of at least approximately 20 degrees.

60. (Amended) The flip-chip of claim [54] 57, wherein said at least one conductive bump comprises at least one trailing edge exhibiting an angle of repose of at least approximately 13 degrees.

61. (Amended) The flip-chip of claim [54] 57, wherein said at least one conductive bump comprises at least one leading edge exhibiting an angle of repose of at least approximately 20 degrees